Record: 1

Title: Randomized trial of vitamin D supplementation to prevent seasonal influenza A in schoolchildren.

Authors: Urashima M; Segawa T; Okazaki M; Kurihara M; Wada Y; Ida H

Author Address: Division of Molecular Epidemiology, Jikei University School of Medicine, Nishi-shimbashi 3-25-8, Minato-ku, Tokyo 105-8461, Japan. urashima@jikei.ac.jp

Source: The American Journal Of Clinical Nutrition [Am J Clin Nutr] 2010 May; Vol. 91 (5), pp. 1255-60. *Date of Electronic Publication:* 2010 Mar 10.

Publication Type: Journal Article; Multicenter Study; Randomized Controlled Trial; Research Support, Non-U.S. Gov't

Language: English

Journal Information: *Country of Publication:* United States *NLM ID:* 0376027 *Publication Model:* Print-Electronic *Cited Medium:* Internet *ISSN:* 1938-3207 (Electronic) *Linking ISSN:* 00029165 *NLM ISO Abbreviation:* Am. J. Clin. Nutr. *Subsets:* Core Clinical (AIM); MEDLINE

MeSH Terms: Dietary Supplements*
Cholecalciferol/*administration & dosage
Influenza, Human/*prevention & control
Adolescent; Body Height; Body Weight; Child; Cholecalciferol/adverse effects; Cholecalciferol/therapeutic use; Double-Blind Method; Female; Humans; Influenza A virus; Influenza, Human/epidemiology; Japan/epidemiology; Male; Patient Selection; Placebos; Risk

Abstract: **Background:** To our knowledge, no rigorously designed clinical trials have evaluated the relation between vitamin D and physician-diagnosed seasonal influenza.
Objective: We investigated the effect of vitamin D supplements on the incidence of seasonal influenza A in schoolchildren.
Design: From December 2008 through March 2009, we conducted a randomized, double-blind, placebo-controlled trial comparing vitamin D(3) supplements (1200 IU/d) with placebo in schoolchildren. The primary outcome was the incidence of influenza A, diagnosed with influenza antigen testing with a nasopharyngeal swab specimen.
Results: Influenza A occurred in 18 of 167 (10.8%) children in the vitamin D(3) group compared with 31 of 167 (18.6%) children in the placebo group [relative risk (RR), 0.58; 95% CI: 0.34, 0.99; P = 0.04]. The reduction in influenza A was more prominent in children who had not been taking other

vitamin D supplements (RR: 0.36; 95% CI: 0.17, 0.79; P = 0.006) and who started nursery school after age 3 y (RR: 0.36; 95% CI: 0.17, 0.78; P = 0.005). In children with a previous diagnosis of asthma, asthma attacks as a secondary outcome occurred in 2 children receiving vitamin D(3) compared with 12 children receiving placebo (RR: 0.17; 95% CI: 0.04, 0.73; P = 0.006).

Conclusion: This study suggests that vitamin D(3) supplementation during the winter may reduce the incidence of influenza A, especially in specific subgroups of schoolchildren. This trial was registered at https://center.umin.ac.jp as UMIN000001373.

Substance Nomenclature: 0 (Placebos)
67-97-0 (Cholecalciferol)

Entry Dates: *Date Created:* 20100421 *Date Completed:* 20100528

Update Code: 20101124

PMID: 20219962

Database: MEDLINE

Record: 1

Title: Vitamin D and tuberculosis.

Authors: Chocano-Bedoya, Patricia
Ronnenberg, Alayne G.

Source: Nutrition Reviews, May2009, Vol. 67 Issue 5, p289-293, 5p

Document Type: Article

Subject Terms: VITAMIN D
TUBERCULOSIS
IMMUNE response
GENETIC polymorphisms
HUMAN genetics -- Variation
NUCLEOTIDE sequence
EPIDEMIOLOGY -- Research

Abstract: Tuberculosis is highly prevalent worldwide, accounting for nearly two million deaths annually. Vitamin D influences the immune response to tuberculosis, and vitamin D deficiency has been associated with increased tuberculosis risk in different populations. Genetic variability may influence host susceptibility to developing active tuberculosis and treatment response. Studies examining the association between genetic polymorphisms, particularly the gene coding for the vitamin D receptor (VDR), and TB susceptibility and treatment response are inconclusive. However, sufficient evidence is available to warrant larger epidemiologic studies that should aim to identify possible interactions between VDR polymorphisms and vitamin D status. [ABSTRACT FROM AUTHOR]

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Database: MasterFILE Premier

Record: 1

Title: Vitamin D and multiple sclerosis.

Authors: Ascherio, Alberto[1,2,3] *aascheri@hsph.harvard.edu*
Munger, Kassandra L[2]
Simon, K Claire[2]

Source: Lancet Neurology; Jun2010, Vol. 9 Issue 6, p599-612, 14p

Document Type: Article

Subject Terms:
*VITAMIN D in human nutrition
*MULTIPLE sclerosis
*PREVENTION
*MEDICAL geography
*NERVOUS system -- Diseases
*PROGNOSIS
*HUMAN genetics -- Variation
*RESEARCH

Abstract: Summary: The hypothesis that adequate vitamin D nutrition can contribute to the prevention of multiple sclerosis (MS) was originally proposed to explain the geographical distribution of MS, but only recently has the relation between various measures of vitamin D (eg, sun exposure, dietary sources, and serum concentrations of 25-hydroxyvitamin D) and risk of developing MS been rigorously investigated. Overall, the results of these studies support a protective effect of vitamin D, but there are uncertainties and many unanswered questions, including how vitamin D exerts a protective effect, how genetic variations modify the effect, and whether vitamin D can influence the course of MS progression. [Copyright &y& Elsevier]

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DOI: 10.1016/S1474-4422(10)70086-7

Accession Number: 50964808

Database: Academic Search Premier

Record: 1

Title: Serum 25-hydroxyvitamin D levels and risk of multiple sclerosis.

Authors: Munger KL; Levin LI; Hollis BW; Howard NS; Ascherio A

Author Address: Department of Nutrition, Harvard School of Public Health, and Channing Laboratory, Brigham and Women's Hospital and Harvard Medical School, Boston, Mass 02115, USA.

Source: JAMA: The Journal Of The American Medical Association [JAMA] 2006 Dec 20; Vol. 296 (23), pp. 2832-8.

Publication Type: Journal Article; Research Support, N.I.H., Extramural; Research Support, Non-U.S. Gov't

Language: English

Journal Information: *Country of Publication:* United States *NLM ID:* 7501160 *Publication Model:* Print *Cited Medium:* Internet *ISSN:* 1538-3598 (Electronic) *Linking ISSN:* 00987484 *NLM ISO Abbreviation:* JAMA *Subsets:* Core Clinical (AIM); MEDLINE

MeSH Terms: Multiple Sclerosis/*blood
Vitamin D/*analogs & derivatives
Adolescent; Adult; African Continental Ancestry Group/statistics & numerical data; Case-Control Studies; European Continental Ancestry Group/statistics & numerical data; Female; Humans; Male; Middle Aged; Multiple Sclerosis/epidemiology; Prospective Studies; Risk; Vitamin D/blood

Abstract: **Context:** Epidemiological and experimental evidence suggests that high levels of vitamin D, a potent immunomodulator, may decrease the risk of multiple sclerosis. There are no prospective studies addressing this hypothesis.

Objective: To examine whether levels of 25-hydroxyvitamin D are associated with risk of multiple sclerosis.

Design, Setting, and Participants: Prospective, nested case-control study among more than 7 million US military personnel who have serum samples stored in the Department of Defense Serum Repository. Multiple sclerosis cases were identified through Army and Navy physical disability databases for 1992 through 2004, and diagnoses were confirmed by medical record review. Each case (n = 257) was matched to 2 controls by age, sex, race/ethnicity, and dates of blood collection. Vitamin D status was estimated by averaging 25-hydroxyvitamin D levels of 2 or more serum samples collected before the date of initial multiple sclerosis symptoms.

Main Outcome Measures: Odds ratios of multiple sclerosis associated with continuous or categorical levels (quantiles or a priori-defined categories) of serum 25-hydroxyvitamin D within each racial/ethnic group.
Results: Among whites (148 cases, 296 controls), the risk of multiple sclerosis significantly decreased with increasing levels of 25-hydroxyvitamin D (odds ratio [OR] for a 50-nmol/L increase in 25-hydroxyvitamin D, 0.59; 95% confidence interval, 0.36-0.97). In categorical analyses using the lowest quintile (<63.3 nmol/L) as the reference, the ORs for each subsequent quintile were 0.57, 0.57, 0.74, and 0.38 (P = .02 for trend across quintiles). Only the OR for the highest quintile, corresponding to 25-hydroxyvitamin D levels higher than 99.1 nmol/L, was significantly different from 1.00 (OR, 0.38; 95% confidence interval, 0.19-0.75; P = .006). The inverse relation with multiple sclerosis risk was particularly strong for 25-hydroxyvitamin D levels measured before age 20 years. Among blacks and Hispanics (109 cases, 218 controls), who had lower 25-hydroxyvitamin D levels than whites, no significant associations between vitamin D and multiple sclerosis risk were found.
Conclusion: The results of our study suggest that high circulating levels of vitamin D are associated with a lower risk of multiple sclerosis.

Grant Information: NS042194 United States NS NINDS NIH HHS; NS46635 United States NS NINDS NIH HHS

Substance Nomenclature: 1406-16-2 (Vitamin D)
64719-49-9 (25-hydroxyvitamin D)

Entry Dates: *Date Created:* 20061220 *Date Completed:* 20061222 *Latest Revision:* 20071203

Update Code: 20101124

PMID: 17179460

Database: MEDLINE

Record: 1

Title: Fracture Prevention With Vitamin D Supplementation: A Meta-analysis of Randomized Controlled Trials.

Authors: Bischoff-Ferrari, Heike A.
Willett, Walter C.
Wong, John B.
Giovannucci, Edward
Dietrich, Thomas
Dawson-Hughes, Bess

Source: JAMA: Journal of the American Medical Association, 5/11/2005, Vol. 293 Issue 18, p2257-2264, 8p, 1 Diagram, 2 Charts, 6 Graphs

Document Type: Article

Subject Terms: VITAMIN D -- Therapeutic use
FRACTURES -- Prevention
DIETARY supplements -- Research
CLINICAL trials
BONES -- Wounds & injuries
VITAMIN therapy
VITAMINS -- Research

Abstract: Context The role and dose of oral vitamin D supplementation in nonvertebral fracture prevention have not been well established. Objective To estimate the effectiveness of vitamin D supplementation in preventing hip and nonvertebral fractures in older persons. Data Sources A systematic review of English and non-English articles using MEDLINE and the Cochrane Controlled Trials Register (1960-2005), and EMBASE (1991-2005). Additional studies were identified by contacting clinical experts and searching bibliographies and abstracts presented at the American Society for Bone and Mineral Research (1995-2004). Search terms included randomized controlled trial (RCT), controlled clinical trial, random allocation, double-blind method, cholecalciferol, ergocalciferol, 25-hydroxyvitamin D, fractures, humans, elderly, falls, and bone density. Study Selection Only double-blind RCTs of oral vitamin D supplementation (cholecalciferol, ergocalciferol) with or without calcium supplementation vs calcium supplementation or placebo in older persons (≥60 years) that examined hip or nonvertebral fractures were included. Data Extraction Independent extraction of articles by 2 authors using predefined data fields, including study quality indicators. Data Synthesis All pooled analyses were based on random-effects models. Five RCTs for hip fracture (n = 9294) and 7 RCTs for nonvertebral fracture risk (n = 9820) met our

inclusion criteria. All trials used cholecalciferol. Heterogeneity among studies for both hip and nonvertebral fracture prevention was observed, which disappeared after pooling RCTs with low-dose (400 IU/d) and higher -dose vitamin D (700-800 IU/d), separately. A vitamin D dose of 700 to 800 IU/d reduced the relative risk (RR) of hip fracture by 26% (3 RCTs with 5572 persons; pooled RR, 0.74; 95% confidence interval [CI], 0.61-0.88) and any nonvertebral fracture by 23% (5 RCTs with 6098 persons; pooled RR, 0.77; 95% CI, 0.68-0.87) vs calcium or placebo. No significant benefit was observed for RCTs with 400 IU/d vitamin D (2 RCTs with 3722 persons; pooled RR for hip fracture, 1.15; 95% CI, 0.88-1.50; and pooled RR for any nonvertebral fracture, 1.03; 95% CI, 0.86-1.24). Conclusions Oral vitamin D supplementation between 700 to 800 IU/d appears to reduce the risk of hip and any nonvertebral fractures in ambulatory or institutionalized elderly persons. An oral vitamin D dose of 400 IU/d is not sufficient for fracture prevention. [ABSTRACT FROM AUTHOR]

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Record: 1

Title: A Higher Dose of Vitamin D Reduces the Risk of Falls in Nursing Home Residents: A Randomized, Multiple-Dose Study.

Authors: Broe, Kerry E.[1] *broe@hrca.harvard.edu*
Chen, Tai C.[2]
Weinberg, Janice[3]
Bischoff-Ferrari, Heike A.[4,5]
Holick, Michael F.[2]
Kiel, Douglas P.[6]

Source: Journal of the American Geriatrics Society; Feb2007, Vol. 55 Issue 2, p234 -239, 6p, 3 Charts

Document Type: Article

Subject Terms: *VITAMIN D
*CALCIUM regulating hormones
*STEROID hormones
*NURSING homes
*HEALTH facilities
*CLINICAL trials

Author-Supplied Keywords: falls
nursing home
randomized clinical trial
vitamin D

NAICS/Industry Codes621498 All Other Outpatient Care Centers
623110 Nursing Care Facilities
623311 Continuing Care Retirement Communities

Abstract: OBJECTIVES: To determine the effect of four vitamin D supplement doses on falls risk in elderly nursing home residents. DESIGN: Secondary data analysis of a previously conducted randomized clinical trial. SETTING: Seven hundred twenty-five-bed long-term care facility. PARTICIPANTS: One hundred twenty-four nursing home residents (average age 89). INTERVENTION: Participants were randomly assigned to receive one of four vitamin D supplement doses (200 IU, 400 IU, 600 IU, or 800 IU) or placebo daily for 5 months. MEASUREMENTS: Number of fallers and number of falls assessed using facility incident tracking database. RESULTS: Over the 5-month study period, the proportion of participants with falls was 44% in the placebo group (11/25), 58% (15/26) in the 200 IU group, 60% (15/25) in the 400 IU group, 60% (15/25) in the 600 IU group, and 20% (5/23) in the 800 IU group. Participants in the 800 IU group had a

72% lower adjusted-incidence rate ratio of falls than those taking placebo over the 5 months (rate ratio=0.28; 95% confidence interval=0.11–0.75). No significant differences were observed for the adjusted fall rates compared to placebo in any of the other supplement groups. CONCLUSION: Nursing home residents in the highest vitamin D group (800 IU) had a lower number of fallers and a lower incidence rate of falls over 5 months than those taking lower doses. Adequate vitamin D supplementation in elderly nursing home residents could reduce the number of falls experienced by this high falls risk group. [ABSTRACT FROM AUTHOR]

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Accession Number: 23827663

Database: Academic Search Premier